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ABSTRACT

Following recent thinking that sees organizations' structures as dependent on their environments, the authors consider characteristics of institutional sectors that affect the organizations arising within them. They first point out problems in present models relating organizations to their environments and discuss several "forerunners" of their proposed model. They begin their presentation of their own model by defining an "institutional sector" as a domain identified by similarity of service, product, or function. The authors then describe four sets of characteristics of institutional sectors and suggest 23 hypotheses about them. The first set of characteristics involves the distinction between technical (or market-run) sectors and institutional sectors (in which rules and requirements predominate). Six hypotheses regarding organizations in these two types of sectors are listed. The second characteristic comprises the sector levels--including national, regional, or local levels--on which an organization operates; one hypothesis is presented. Sector decision-making processes, on funding or program matters, constitute the third set of characteristics. Eleven hypotheses are generated regarding decision-making centralization, fragmentation or unification, and substance (whether deciding core or peripheral matters). The fourth set of characteristics and the final five hypotheses involve sector controls, including structural, process, or outcome modes of control. (RW)

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THE ORGANIZATION OF INSTITUTIONAL SECTORS

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July 1982

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Abstract

Following a recent line of thought in which organizational structure is seen as heavily dependent on its environment, we consider properties of institutional sectors in society that affect organizations arising within them. Some lines of argument: Sectors with weak technologies generate especially institutionally dependent organizations; and external controls emphasize structural conformity rather than outcomes. Sectoral centralization in the United States has emphasized funding more than decisionmaking, and tends to be fragmented among special-purpose controls: this generates weak "line" control systems and a plethora of special regulative controls, which in turn generate administrative complexity in local organizations within these sectors. Such a system also generates decentralized (or loosely-coupled) professional power over the substance of programmatic decisions.

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Inadequacies of Present Models

Existing organizational paradigms deal inadequately with the pattern of connectedness and disconnectedness among organizations. While there has been great progress during the past two decades in moving outside the formally defined boundaries of organizations to take account of environmental stimulants and constraints and interorganizational exchanges and ties, present models remain inadequate in important respects. Dominant current models incorporating environmental and interorganizational influences include the following:

Organization-environment models: a family of models emphasizing the dependence of an organization on its environment, environments being viewed either as sources of information or stocks of resources. (Aldrich and Pfeffer, 1976) Analysis focuses on uncertainties or dependencies created as organizations adapt--both actively and passively--to such contingencies. (For exemplars, see Dill, 1958; Thompson, 1967; Pfeffer and Salancik, 1978.) All such models are developed from the standpoint of a specific "focal" organization. This organization-centric perspective is developed most explicitly by those analysts who define the relevant system as an "organization set"-- comprised of a focal organization and its exchange partners. (See Blau and Scott, 1962, 195-199; Evan, 1966)

Organizational population models: a group of models that refers to aggregates of organizations viewed as similar; for example, all universities or all newspapers. The notion of a population of organizations is analagous to that of a specific species in biology. Varying criteria have been proposed to identify the members of an organizational population, including common structural features, similar patterns of activity, similar functions performed for the societal system, and similar responsiveness to environmental

variations. (See Hannan and Freeman, 1977; McKelvey, 1978; Aldrich, 1979) Whereas most population models stress that organizational forms are selected for survival by environmental forces, they also presume independence in the units comprising the population: relations or connections among organizations within a population are assumed not to exist.

Interorganizational field models: a group of models focusing on the relations linking a collection of organizations. Most models of this type have examined the relations and exchanges occurring among similar or dissimilar types of organizations located within the same community or metropolitan area. Unlike the other types of models reviewed, this group does attend to the nature of the patterns exhibited by the relations among organizations. Indeed, in these models, the focus is more on the relations among organizations than on the organizations themselves. (See Litwak and Hylton, 1962; Warren, 1967; Turk, 1977) However, with but few exceptions, these field models have concentrated on horizontal linkages among organizations--that is, linkages among organizations lacking formal authority or fiscal control over one another--and on linkages among organizations within a delimited geographical area, such as an urban community.

Each of the types of models reviewed, while supporting important modes of analysis associated with valuable insights into the structure and functioning of organizations, is for present purposes limited. Assuming the perspective of a selected, focal organization, as is characteristic of most organization-environment models, directs attention away from the characteristics of the larger system of relations within which each organization plays a specialized and delimited part. The population ecology model aids in the examination of varying modes of adaptation among similar organizations but tends

to ignore or conceal the connections among these organizations. And the interorganizational field model--in application if not in principle--directs attention to the interconnections among organizations operating at approximately the same level and within the same localized area.

The type of model proposed in the present paper is most easily described as an alternative version of the interorganizational field model. All models are necessarily selective. As noted, the currently fashionable interorganizational field models stress horizontal connections among collections of organizations in a delimited geographic area. The alternative version proposed for development in this paper emphasizes vertical or hierarchical and extra-local connections among organizations.

Forerunners of the Proposed Model

It is possible to identify two earlier models that anticipate some features of the proposed model. Significantly enough, these anticipatory models have been developed outside the main stream of organizational analysis. The first, proposed by Warren, was developed to aid the analysis of community structure. The second, reflecting the work of numerous analysts, primarily political scientists, was designed to assist in the study of the development and, in particular, the implementation of public policies. We will briefly review each of these approaches.

Warren's Community Patterns. As early as 1963, Roland Warren developed a theoretical model on the basis of which to examine the structure of American communities (1963: rev. 1972). At the heart of his model is the distinction between the "horizontal" and the "vertical" pattern of relations linking social units within and among communities. Warren (1972: 162) develops the distinction as follows:

> We shall define a community's horizontal pattern as the structural and functional relation of its various social units and subsystems to each other. The term 'horizontal' is used to indicate that, roughly speaking, the community units, insofar as they have relevance to the community system, tend to be on approximately the same hierarchical level (a community unit level, as opposed to a state, regional, national, or international level of authority, administration, decision-making, and so on).

At a minimum, relations develop even among the most diverse units based on their sharing of a common locality. Warren (1972: 161) continues:

> We shall define a community's vertical pattern as the structural and functional relations of its various social units and subsystems to extracommunity systems. The term 'vertical' is used to reflect the fact that such relationships often involve different hierarchical levels within the extracommunity system's structure of authority and power. The relationships are typically those of a system unit to the system's headquarters, although several intervening levels may occur.

Warren insists that his typology differentiates among patterns of relations, not types of units: most social units, including organizations, are involved in both horizontal and vertical connections. The horizontal-vertical distinction is also viewed as related to the well known task-maintenance distinction. Thus, Warren (1972: 163) argues that, in general:

> task performance by the community's constituent subsystems--schools, churches, factories, voluntary associations--tends to orient them toward extracommunity systems. On the other hand, maintenance functions tend to be carried on across the subsystems of the community, involving the horizontal pattern of relationship among these local units.

Of more importance for our purposes, Warren argues that the vertical, extra-local patterns tend to be rationally constructed and hierarchically arranged while the horizontal, locality-oriented patterns are more likely to be informally structured with authority relations relatively delimited and market-like, competitive processes determining the relative power and influence of individual units. (1972: 242-243; 273) Finally, it is Warren's thesis that

American communities are currently and increasingly undergoing a "great change" that involves "the increasing orientation of local community units toward extracommunity systems of which they are a part, with a corresponding decline in community cohesion and autonomy." (1972: 53) That is, in Warren's view, the structure of American communities is increasingly dominated by the vertical pattern of relations linking its social units to external systems rather than by the horizontal pattern of relations among units in the same locality.

Warren's principal arena of concern is the community, and as we have seen, he is quite clear that in his view the dominant force in community structure at least in the U.S. is the nature of the linkages that relate local organizations to external regional, state or national systems. It is surprising then, that in the area of organization theory, Warren is associated with the interorganizational field models already described that devote primary attention to the analysis of patterns of horizontal relations among organizations within the same community. We attribute this (mis)conception to the impact of his paper published in Administrative Science Quarterly, a journal devoted to organization theory and research. In this influential article entitled "The interorganizational field as a focus for investigation," Warren (1967) restricted attention to the horizontal pattern of relations among community organizations, defining several modes of interrelations and illustrating them with data from a study of community-level planning organizations in three cities. Warren (1967: 399, fn.10) was careful to call attention to the limited scope of his analysis in a footnote:

> . . . although the present analysis confines itself to interaction among organizations at this community level, the vertical relations to organizational systems outside of the community, as, for example, the federal government, should not be overlooked.

Apparently, however, this important restriction--as well as Warren's theoretical work on community structure--was overlooked by organizations analysts and the elaborated part of the model was taken for the whole. In spite of his own efforts, Warren's influence on interorganizational analysis has been to bolster studies of informal, horizontal ties among organizations in the same locality to the neglect of formalized, vertical, extra-local connections.

Public Policy Studies. The past two decades have witnessed the development and rapid growth of a new field of inquiry: public policy analysis. Early attention within this field was focussed on the determinants of public policy decisions--the characteristics of political actors, the nature of the political and agency context, the activities of interest groups--as well as on the decision process itself. (See Wildavsky, 1964; Lindblom, 1968; Allison, 1971) More recently, however, attention has shifted to include not only policy decisions but their implementation since, in one policy arena after another, examination has revealed that far from being automatic, the implementation of public policy decisions is highly problematic. (See Moynihan, 1969; Derthick, 1972; Neustadt and Fineberg, 1978; Estes, 1979). Recently, some analysts have made implementation their primary focus (see Pressman and Wildavsky, 1973; Bardach, 1977), and it is this work that foreshadows our own efforts.

An emphasis on implementation is of interest because it directs attention to the administrative structures linking decision makers with recipients of rules or services. The decisions involved are public policies set at national or state levels to be implemented at local levels. The implementation mechanism is necessarily an interorganizational system: a set of vertical

and horizontal linkages coupling administrative systems at higher levels with those at lower levels and systems at one location with those at another.

Certain common themes may be discerned in the work of those analysts who have attempted to characterize these implementation networks as they function at the present time in the U.S.

- There is a trend toward "sectorialization" of policy, programs and agencies increasingly being defined in limited, functionally differentiated terms. (Wildavsky, 1979: 71-77) Indeed, Wildavsky proposes that government can usefully be viewed as a "federation of sectors" in the sense that governmental units tend to cluster by policy area with vertical links connecting federal, state, regional and local levels.
- Along with this tendency is the closely related phenomenon that horizontal connections between sectors tend to be nonexistent or weak. It is commonly observed, for example, that governmental units within the same geographical area often function independently even when their activities and associated outcomes are highly interdependent. (Sundquist, 1969; Wildavsky, 1979) And, increasingly, proposed reforms call for improved lateral modes of articulation and coordination. (e.g., see report of Kestnbaum Commission, 1955) (Note the similarity between these observations and Warren's depiction of trends in the structure of American communities.)
- Observers have long noted that the administrative structures of governmental agencies within each sector tend not to be simple, lean, "rational" bureaucracies, but relatively complex and

overlapping systems. Federalism--the explicit establishment of independent authorities with both separate responsibilities and overlapping jurisdictions--is viewed as a prime contributor to this complexity. Moreover, analysts have noted that in operation, national, state, and local units increasingly share responsibilities rather than operating in separate arenas. To capture this feature, Grodzins (1961: 3-4) suggests the vivid metaphor of a marble cake in contrast to a layer cake:

> Wherever you slice through it you reveal an inseparable mixture of differently colored ingredients. There is no neat horizontal stratification. Vertical and diagonal lines almost obliterate the horizontal ones, and in some places there are unexpected whirls and an imperceptible merging of colors, so that it is difficult to tell where one ends and the other begins. So it is with federal, state, and local responsibilities in the chaotic marble cake of American government.

(See also, Grodzins, 1966; Elizar, 1962; 1972)

- As part of the liberal tradition in this country, public authorities have been willing to collaborate with private interests, giving them access to public decision makers and public resources, and bestowing on them, to varying degrees, public authority. Theodore Lowi (1969: 68-85), an astute observer of this arrangement, has labeled it "interest group liberalism." The extreme form is represented by the emergence of "corporatism," in which selected private organizations are designated as the official representatives of the designated interests and, hence, crowned with public authority. (See Schmitter, 1974) The point of central interest here is that private as well as public organizations are viewed as legitimate participants in the decision and implementation processes within each sector. (See McLanahan, 1980)

- Finally, some types of federal actions during the past two decades have been associated with the development of new structural forms: novel decision and implementation structures. Social legislation during the 1960's and 1970's was frequently characterized by relatively vague and general goals together with explicit delegation of programatic authority to lower organizational units. Often coupled with this allocation of discretion was the requirement to facilitate participation in decision-making by affected constituencies. Commenting on the rationale for these arrangements, Lowi (1969: 233) points out that in a democratic system, "the further down the line one delegates power, the further into the administrative process one is forced to provide representation." In other cases, policy requirements have been quite explicitly stated by federal statute, funds set aside to finance the desired arrangements, and specific provisions made for monitoring compliance at the local level.

Both of these forms--highly decentralized units and categorical programs--were developed, at least in part, as a means of linking national purposes directly with local-- e.g., municipal--agencies, bypassing state structures as intermediate units. Designers of programs whose rationale was furthering social justice or equity were inclined to view state involvement as adversely affecting stated objectives. However, the current trend appears to be toward a resurgence of state involvement in Federal programs and a return to earlier modes of nation-state collaboration.

For present purposes, these accounts of increasingly elaborate federal programs and implementation systems provide important evidence of the growing inter-connectedness of organizational systems--both public and private--in American society. And they supply valuable descriptive information about the variety of forms such connections may take including changes over time. With Warren's interorganizational field model and these accounts from public policy analysts as background, we are ready to commence a more systematic discussion of our theoretical interests and to present a preliminary formulation of concepts and hypotheses relating to the organization of institutional sectors.

Determinants and Consequences of Sector Organization

Institutional Sectors

We propose to study the organization of institutional sectors. We will identify numerous characteristics of these sectors and develop propositions regarding their determinants and interrelations; and we will generate additional hypotheses relating the characteristics of institutional sectors to the characteristics of organizational forms and processes within these sectors.

To begin, we must indicate what is meant by the concept of institutional sector. We intend this term to refer to a domain identified by similarity of service, product or function. In our intended usage, the concept is somewhat comparable to the economist's use of the term "industry" to refer to all sellers of one type of product or service--or, more abstractly, to those firms characterized by a close substitutability of product usages who, as a consequence, exhibit demand interdependence. At the same time, as described below, our concept of sector is not equivalent to industry.

Attempts to apply definitions of sectors based on the criterion of similarity of product or function reveal numerous problems, of which three merit comment. One problem is posed by the level of specificity at which the criteria of similarity are applied. Are we to talk about air travel or about transportation? about short-term acute medical care or about medical services? This problem is perhaps most easily solved by being quite explicit about the nature--including level of specificity--of the criteria used, and by recognizing that our analysis and conclusions will be strongly influenced by the choices made. The criteria selection problem is eased by the nature of the phenomenon addressed, whose complexity tends to assume a hierarchical form in the sense that higher levels are composed of clusters of units at lower levels

that themselves may be further disaggregated (see Simon, 1962) For example, transportation as a category of services subsumes air travel and other alternative means of locomotion, and so on. This tendency toward hierarchically organized clusters is exploited by the well-known Standard Industrial Classification (SIC) system developed by the U.S. Bureau of the Census. This four-level system classifies all units providing goods and services into ten broad functional divisions (e.g., Mining, Manufacturing, Wholesale trade, Services); next into industry groups (e.g., within the Services division, Health Services, Legal Services, Educational Services); then into individual industries (e.g., within Health Services, Offices of physicians, Nursing and personal care facilities, Hospitals); and finally into specific products or services (e.g., within Hospitals into General medical and surgical hospitals, Psychiatric hospitals, etc.) (see Office of Management and Budget, 1972). Our own concept of sector is intended to convey a relatively broader (or higher level) basis of classification, roughly comparable to the "industry group" level.

A second problem confronting all attempts to identify "similar" products or services is that of substitutability. It is often the case that products and services that are greatly dissimilar in form or composition may be addressed to the same need or function. Along the continuum of form vs. function, we stress the criteria of function: we wish to include within the same sector units supplying products or services that are apparently dissimilar but functionally equivalent. In this respect, our approach departs significantly from the conventional industrial categories identified by economists (e.g., the SIC categories) and is more compatible with the view of policy sectors developed by public policy analysts. In the latter tradition, sector tends to be defined in terms of "needs" or "problems." For example, the "housing sector" might be

said to consist of all of the public and private organizational units, relations and flows relevant to maintaining and adding to the supply of housing in this country. Such a definition would clearly encompass units from many different industries and industry groups: for example, components of construction, banking, public administration, and insurance. Thus, as Christensen (1980: 20) notes, such definitions of public policy sectors "are not equivalent to the traditional economic classification of sectors but rather derive from the meshing of politically created (i.e., the legislative committees and administrative agencies) units with the private economy."

While emphasizing this functional criterion in our own approach to sector definition, we prefer not to link our categories so closely to the content of and controversies concerning current public policies. Hence, we prefer the more neutral and sociologically traditional, but still implicitly functional label of institutional sector.

A third problem is one that confronts all attempts to apply specific classification criteria: the concrete units are often broader or more diffuse than the classes identified. In our case, having decided to emphasize function all organizational units are not functionally specific. Indeed, there is a well-known tendency for contemporary firms and agencies to diversify, producing products or services for widely differing purposes and markets. One approach to the problem is that devised by the developers of the SIC. They propose that the units classified should not be companies, but "establishments" --an economic unit, generally at a single physical location and more likely to be engaged in a single type of activity. It may be possible, data sources permitting, to go further in this direction and include only selected components or subunits of organizations. Similarly, we may focus on the level

of single bureaus or offices performing particular types of activities rather than incorporating entire public agencies or departments. Even so, we will no doubt often be forced to embrace the second SIC principle and settle for including or excluding units from the sector depending on their "primary" functional activity. Such an approach helps to deal with the problems of boundary definitions for institutional sectors: determining what organizational units are to be regarded as within the sector. However, our interest in sector characteristics per se allows us to turn this problem into a useful variable at the sector level: we can assess the extent to which the organizational units within a given sector are functionally specialized in the sense that they are exclusively devoted to the specified set of activities. Clearly, institutional sectors vary in the extent of the functional specialization of their component units.

Although we have chosen to depart from the specific definition of industry as developed by economists, we follow their lead in our general theoretical orientation. In spite of the definitional and operational difficulties economists have encountered, they have found the concept of industry to be highly serviceable and have long recognized that "the behavior of the firm can depend crucially on the organization of its industry." (Sherman, 1974: 215) We encounter similar difficulties in defining institutional sector, and yet are convinced that we can employ this concept in explaining some important features of organizational structure and behavior.

Selected Sector Characteristics

The general approach we employ is to identify several characteristics of institutional sectors in order to (1) examine the relations among these characteristics at the sector level and (2) examine the relations between these

characteristics and the properties of organizations functioning within the sectors. A large number of hypotheses are generated, but at this point they are only described and illustrated. We believe that most of them are testable, within either a cross-sectoral or a cross-societal design; and we are currently in the process of developing tests for selected hypotheses.

Institutional vs. Technical Sectors: Institutional sectors are characterized by the elaboration of rules and requirements to which individual organizations must conform if they are to receive support and legitimacy from the environment. Technical sectors are those within which a product or service is provided that is exchanged in a market such that organizations are rewarded for effective and efficient control of the work process. (These brief definitions are elaborated in Meyer and Rowan, 1977; and in Meyer, Scott and Deal, 1981) It is useful to regard these characteristics as dimensions along which there is considerable variation; and while the two dimensions tend to be negatively correlated, they are apparently not strongly so, so that varying combinations may be observed. Thus, it is possible for a sector to be highly institutionalized with little technical development--e.g., the educational sector (see Meyer and Rowan, 1978); or a sector may exhibit high technical and low institutional development--e.g., retail goods manufacturing; or a sector may exhibit simultaneously high technical and high institutional development--e.g., the medical care (see Scott, 1981a) or the banking sector; or a sector may display both low technical and institutional development--e.g., the personal services sector.

We will not repeat here arguments developed at length elsewhere (see Meyer and Rowan, 1977, 1978; Meyer, Scott and Deal, 1981), but simply summarize our major hypotheses regarding the effects of these sector characteristics on organizational forms.

H_1: Organizations in technical sectors will attempt to control and coordinate their production activities, buffering them from environmental influences.

H_2: Organizations in technical sectors will succeed to the extent that they develop efficient production activities and effective coordination structures.

H_3: Organizations in institutional sectors will not attempt to closely control or coordinate their production activities, but will seek to buffer or de-couple these activities from organizational structures.

H_4: Organizations in institutional sectors will succeed to the extent that they are able to acquire types of personnel and to develop structural arrangements and production processes that conform to the specifications of that sector. (See Meyer, Scott & Deal, 1981)

Two additional hypotheses are proposed:

H_5: Organizations functioning in sectors that are highly developed both institutionally and technically will develop more complex and elaborate administrative systems and will experience higher levels of internal conflict.

For example, technical-institutional organizations such as hospitals and defense contractors are likely to exhibit dual authority systems or matrix structures; and levels of conflict are reported to be high in these situations (see Neuhauser, 1972; Davis and Lawrence, 1977; Scott, 1981b).

H_6: Organizations functioning in sectors that are not highly developed either technically or institutionally are expected to be relatively small in size and weak in terms of their capacity for survival.

Examples include restaurants, barber shops and similar personal service establishments. Such units, however, are always potential targets for societal support and organizational up-grading, with the creation of a new rational myth (Meyer and Rowan, 1977). Such an organizing and rationalizing process is currently underway in this country in the arena of personal services for the elderly (see Scott, 1981c).

Sector Levels: An important characteristic of sector organization is the number of levels at which organizational units are operating. The five most commonly observed levels within a society are:

- national or society-wide offices, associations
- regional or multi-state agencies, associations
- state offices, associations
- area-wide district offices, councils
- local units, branch offices

Note that although the levels are identified in terms suggesting public organizations, private organizations and associations may be identified at each of these levels in most sectors. And although there is nothing sacred or definitive about this listing of levels, it appears applicable to a large number of sectors. Indeed, we go so far as to predict:

H_7: Organizational units are likely to develop at each level within a given institutional sector. If a given level is not represented at $time_1$, it is likely to develop at $time_2$.

This expectation is largely based on the growth during the past fifty years of more activist policies and programs at the national level. Such top-down programs tend to generate a variety of intermediate layers of organizations to administer and monitor activities and expenditures. For example, as the Federal government has moved into the health care sector, intermediate level units have developed at both the regional--e.g., regional offices to oversee the Professional Standards Review Organizations (PSRO) and the Health Systems Agencies (HSA)--and the area-wide levels (individual PSRO and HSA agencies). At the same time, state-level agencies have increased--e.g., state medicare and medicaid agencies, statewide PSRO Review Councils. It is also expected that the development of public organizations at any given level will tend to

encourage the emergence of private sector units and associations at the same level. (See Galbraith, 1952)

We would expect the properties of organizational units at one level to be influenced by those at other levels to which they relate. In our view, such relations are mediated primarily by the structure of decision making within sectors, so that our interlevel predictions will be presented in the following section after we describe some of these variables.

Sector Decision-Making: We distinguish two classes of decisions made within all sectors:

- Funding Decisions refer to the right to determine what level of funding is appropriate and how funds are to be allocated among units within sectors.

- Programmatic Decisions refer to the right to determine the purposes or goals toward which unit activities and other resources are to be directed.

Three dimensions may be identified to characterize decision-making arrangements within sectors. These dimensions can and should be applied separately to each class of decisions, since funding and programmatic decisions often display divergent patterns within sectors, with varying consequences for organizational forms and processes. The dimensions are as follows:

1. Centralization-decentralization of decision-making.

This variable refers to the extent to which decisions are made at higher rather than lower levels within a sector. While the degree of centralization varies greatly in this country from one sector to another, we believe that:

H_8: In virtually all sectors within the U.S. during this century, there has been an increase in the degree of centralization of decision-making.

This trend appears to hold both for sectors dominated by private organizations as well as those characterized by heavy public involvement. In the former case, increased centralization is associated with increased levels of concentration within industry groups as well as with the widespread rise of tactics such as interlocking directorates and the creation of formal and informal associations to reduce uncertainty and support interorganizational action. (See Pfeffer and Salancik, 1978). In the latter case, the increased tendency of the federal government to support and regulate a wider and wider array of products and services is well known.

It also appears that centralization of decision-making within sectors exhibiting extensive public involvement has not proceeded evenly with respect to the two classes of decisions:

H_9: In general, for most public sectors in the U.S., funding decisions are more highly centralized than are programmatic decisions.

This generalization rests in part simply on the superior taxing abilities of higher as compared to lower levels of government. It also rests on the widespread development of and support for professional occupations in this society. Professionals demand and command discretion and control over programmatic decisions falling within their claimed sphere of competence. They organize to secure these decision-making rights for themselves and, in the case of the more highly developed professional occupations, secure legal claims to these rights backed by state authority and impose them on employing institutions. (See Freidson, 1977) Thus, we would argue:

H_{10}: The more highly professionalized a given sector, the more likely that programmatic decisions will be decentralized.

Professionals have also on occasion opposed the centralization of funding for their services. The American Medical Association, for example, actively

opposed the Medicare and Medicaid programs. However, physicians' negative attitude toward these programs quickly changed (see Colombotos, 1969), when they experienced the advantages of regular reimbursements for services rendered, even to impecunious clients. Analysts are agreed that one immediate effect of centralized funding for services has been a rapid increase in the services provided--both patients and providers have a vested interest in receiving and providing the "best"--i.e., most--services available. Indeed, the situation is currently defined as sufficiently out of hand that a wide range of limitations and constraints have been developed and are being tested to curb the rapid increase in health care costs. These cost-control mechanisms take on special forms, as is suggested by the following principle.

The extent and type of centralization exhibited by an institutional sector may have important consequences for the structure of organizations operating within that sector. Thus, as Meyer (1979) has argued:

> H_{11}: The centralization of decision-making concerning funding in the absence of centralized programmatic decision-making, is associated with the development of vertical interlevel controls exercised through accounting and statistical mechanisms.

In such systems, control is exercised by financial officers and accountants. As Meyer (1979: 13) notes, these "central functionaries do not have the direct authority to set policies, and so justify their expenditures through narrower technical rules." In school systems for example, funding may be tied to attendance data with close attention paid to its proper accounting; and in hospitals, reimbursement may be tied to conformity to rules regarding length of patient stay. Further, in the health care sector where costs are rising very rapidly, as previously described, most of the efforts involve direct fiscal measures such as prospective reimbursement systems or rate review boards. As Scott (1981a) has observed:

It is true that those who pay the bill--including governments--reserve the right to define the nature of what they will buy, so that with fiscal programs have come specifications of minimum standards of care. (See Ball, 1974) The standards set, however, most often take the form of insisting that the providers be licensed and the care units be accredited--endorsing the standards set by the professional providers --and then indicating what level of services will be reimbursed.

2. Fragmentation-unification of decision-making.

Fragmentation refers to the absence of integration or coordination of decision-making at any given level of the sector. Thus, while centralization refers to vertical integration, unification refers to horizontal or lateral integration. Sectors that have become increasingly centralized may still exhibit fragmentation. This combination of centralization and fragmentation is especially likely to occur in sectors dominated by public organizations under certain political conditions:

H_{12}: Liberal regimes that encourage a pluralist approach to decision-making and that emphasize the separation of powers within nation-state structures are likely to exhibit higher levels of fragmentation of decision-making within sectors (as well as between sectors--see Wildavsky, 1979)

Grodzins (1961: 7) has argued that another contributing factor in the American case is the structure of political parties--highly decentralized systems that tend to "disperse power in favor of state and local governments."

The medical care and the educational sectors provide good examples of institutional sectors that are characterized by high levels of fragmentation. Although in recent years both sectors have exhibited increased centralization as considerable decision-making authority has been shifted from local to state and national levels, the degree of integration at these levels is low. A large number of programs and requirements have been generated but they are often highly specific in focus, sometimes work at cross-purposes, and are associated with highly differentiated administrative agencies and linking

mechanisms. (For the health care sector, see Somers, 1969; Kinzer, 1977; for the educational sector, see Berman and McLaughlin, 1975-78; Meyer and Rowan, 1978).

Fragmentation is signified either by the large number of uncoordinated loci of decision-making at a given level or by the large and varied number of routes or channels used to transmit decisions from one sector level to another. These two indicators of fragmentation appear to be highly correlated.

In our discussion of the problems in defining institutional sectors, it was noted that they vary in terms of the extent of their functional differentiation. We can now suggest a possible source of this variation:

H_{13}: The more centralized and unified decision-making within a sector, the greater the degree to which organizational units within the sector will be functionally specialized.

The argument is simply that centralized and unified decision centers prefer to run a "tidy shop." They are in a position to plan and compare, design and create a system of organizations and in doing so they are likely to be governed by "rational"--that is, orderly and systematic--criteria. A related hypothesis pursues the same logic:

H_{14}: The more centralized and unified decision-making within a sector, the fewer the number of different forms of organization within the sector and the greater the variance between them.

Backman and Tamuz (forthcoming) employ this proposition to help account for the differences they have observed between sectors providing prison services--a unified sector exhibiting a limited number of clearly differentiated facilities--and mental health services--a fragmented sector exhibiting a large number of overlapping and poorly-defined facilities.

Other effects of centralization and fragmentation of sector decision systems on the organizational forms within sectors are described in the following section. (See also, Meyer, 1979)

3. Substance of decision-making.

By substance, we refer to whether the decision-making within each sector concerns core areas or relatively peripheral matters. In all sectors it is possible to identify a core set of decisions--sometimes a large number; sometimes relatively few--that are regarded by participants as of primary importance. Other decisions are understood to be secondary or peripheral. It is, of course, possible to identify core and peripheral programmatic decisions; it is similarly possible to determine whether funding decisions are targeted for the support of core or peripheral activities. For example, in the medical care sector, core programmatic decisions continue to be decentralized; only the more peripheral decisions are currently at all centralized. As Alford (1975: 195) notes:

> The physicians in private practice and the voluntary hospitals still constitute the core of the health system. All of the federal, state, and local programs and projects which occupy so much time and energy of both types of reformers [market and bureaucratic] are still on the periphery of the health system.

On the other hand, as already noted, funding decisions in the medical care sector have become increasingly centralized during recent years; and, at the same time, they have shifted from the funding of relatively peripheral programs--e.g., workers' compensation, maternal and child health care for indigent women --to the support of core services--e.g., the funding of acute hospital care through Medicare, Medicaid and Blue Cross programs.

By contrast, funding in the educational sector is not highly centralized, as previously noted, and programmatic decision-making at the Federal level is restricted to relatively peripheral matters. The so-called "categorical" programs are addressed primarily to marginal schools and students--economically disadvantaged, physically and educationally handicapped, bilingual, etc.

State agencies are increasingly involved in the funding of core educational programs through the use of "block" grants; programmatic decision-making patterns on core educational matters differ from state to state, but involve varying combinations of state, district and local units. (See Meyer, 1981)

We would expect the extent of professionalization of a sector to affect the locus of core vs. peripheral decision-making:

H_{15}: The more highly professionalized a given sector, the more likely that programmatic decisions on core issues will be decentralized.

Extensive professionalization appears to be consistent with the centralization of peripheral decisions as well as with the centralization of funding for core programs.

In order to examine the effects of these three dimensions of decision-making on the characteristics of organizations located within a sector, consider the following combinations of conditions:

	Sector A	Sector B	Sector C	Sector D
Decision-making properties	Centralized Unified Core	Centralized Unified Peripheral	Centralized Fragmented Core	Centralized Fragmented Peripheral
Examples	SSA Private monopoly	FFA Trade association	Public Housing programs Poverty programs Oligopoly	Education programs. Controls on private industry (e.g., OSHA, EPA)

To simplify matters, we restrict attention to programmatic decisions. Note also that all of our situations involved centralized decision-making. We are particularly interested in the effects of fragmentation and variations in substance under conditions of centralization.

When decision-making is both centralized and unified, as in Sectors A and B, we would expect to observe a relatively lean and taut system of vertical

controls among organizations at differing levels within the sector. A hierarchy would be established that operated through the exercise of line controls. In short:

> H_{16}: Organizations operating in sectors characterized by centralized and unified programmatic decision-making are expected to be tightly coupled across levels and to exhibit relatively small administrative components at each lower level. (See Meyer, 1979)

Examples of such arrangements include such public sector agencies as the Social Security Administration (SSA) and the Federal Aviation Administration (FAA), as well as such private sector arrangements as monopolistic enterprises and trade associations that enjoy the support of a large majority of their member organizations. The monopoly example suggests that, particularly at the upper levels of the sector, there is likely to be superfluous administrative expansion: pressures for efficiency will not be high under such conditions. Nevertheless, the linkages among organizations at differing levels within such sectors are expected to be relatively clean: the chain of command is expected to be clear.

By contrast, when the decision-making within sectors is centralized but fragmented, as in Sectors C and D, the result is expected to be administrative confusion and complexity.

> H_{17}: Organizations operating within sectors characterized by centralized but fragmented programmatic decision-making are likely to develop elaborated and convoluted administrative structures at each level. (See Meyer, 1979)

Examples of these systems include such public programs as housing and poverty, education and controls on private industry. The chief attribute of these programs is their multiplicity and variety, with agencies and programs piling up in ways that are sometimes supplementary, but more often duplicative or overlapping and occasionally, conflicting. Because there are many agencies and each has

only a piece of the action--programmatic authority is centralized, but fragmented--they must develop independent connections to all the organizations to which they relate. The analytic and decision-making procedures within each of these agencies may be highly rational but the combined effect on the subordinate units of the various program and reporting requirements can produce confusion bordering on administrative chaos at these levels. (For the case of public school districts, see Bankston, 1981)

The growth of sectors characterized by more centralized but fragmented decision structures during the past three decades helps to account for the "marble cake" texture of American administrative systems. Sundquist (1963: 13) describes these developments:

> When the federal structure was transformed in the 1960s, it was not recast according to anybody's master plan. Nobody had one . . . . Each statute had its own administrative strategy. Some programs followed the older model of federalism; most were patterned on the new. Formula grants coexisted with project grants. Established agencies vied with new ones as the recipients of the federal funds, in a welter of relationships and patterns that varied from agency to agency and from program to program.

Even when it became clear that more coordination among agencies working in the same or related functional areas was needed, the result has not often been the creation of a unified system. As Sundquist (1969: 19) explains:

> As the need for coordination began to be felt by planners and administrators within the federal government--and as external criticism mounted--the government responded by moving to create an elaborate structure of coordination, both in Washington and at the community level (with some innovation, too, at the regional and state levels). In doing so, the government chose to rely almost wholly upon systems of mutual adjustment rather than of central direction, upon what could be attained through negotiation among equals rather than through the exercise of hierarchical authority.

In addition to an inability to unify authority at the higher level, there is also the problem of conflicting coordination requirements among levels.

Alford (1975) has argued that attempting to rationalize a sector such as health care is likely to create conflicts between local, regional, and national coordination efforts. Alford (1975: 207) concludes:

> . . . even if the alleged goal of corporation rationalization is to coordinate and integrate a number of organizations into a cohesive whole, the successful instituting of such bureaucratic controls over several organizations means that planning and coordination of the larger health system becomes more difficult. Generating enough power to integrate a portion of it successfully means, almost by definition, that this part is now insulated from outside influence and can successfully resist being integrated into a still larger system.

We and most other analysts are prone to think of lean, simple, unified administrative systems as "rational" since they correspond with the classic Weberian model of efficient administrative design. And, indeed, such administrative arrangements signal and symbolize efficiency. However, some experienced observers such as Grodzins and Landau point to the positive functions served by administrative chaos and redundancy.

> Morton Grodzins concluded from his seminal study of federalism that "a little chaos" is a good thing--the whole system is more responsive when jurisdictional lines are not clear and exclusive, because a citizenry thwarted at one level of government can have recourse to another. (Sundquist, 1969: 27)

Grodzins cites the value of responsiveness; Landau (1969; 351), the value of error-correction and stability:

> . . . it may be quite irrational to greet the appearance of duplication and overlap by automatically moving to excise and redefine. To unify the defense departments, or the several independent information-gathering services of the government, or the large number of agencies engaged in technical assistance, or the various anti-poverty programs, or the miscellany of agencies concerned with transportation, or the great variety of federal, state and local administrations that function in the same areas may rob the system of its necessary supports. It can be hypothesized that it is precisely such redundancies that allow for the delicate process of mutual adjustment, of self-regulation, by means of which the whole system can sustain severe local injuries and still function creditably.

Examples of centralized but fragmented decision-making in the private sector are provided by oligarchical arrangements. When a relatively few organizations account for most of the sales in a given industry, or, more generally, when an industry exhibits high levels of concentration, then firms are encouraged to take one another into account as a basis for charting their own action. Because their outcomes are interdependent, organizations under these conditions attempt to coordinate their actions in a more or less formal manner. (See Sherman, 1974: 248; Pfeffer and Salancik, 1978: 175) Such attempts at coordination may or may not be successful in overcoming the fragmentation. If not, then we would expect to observe the same relatively complex and convoluted administrative systems developing to manage the complex interdependencies.

Turning to the substance of decision-making, the core/periphery distinction appears to affect the role of the subordinate units. As might be expected, given centralized core decision-making rights, subordinate units are likely to assume responsibility for the direct conduct of the program. On the other hand, given centralized peripheral rights, subordinate organizations only support or oversee the activities of other organizations that assume primary responsibility for carrying on the core activities. Thus:

> H_{18}: Subordinate units in sectors in which core decision-making rights are centralized are expected to assume principal responsibility for pursuing the primary goals within the sector, while subordinate units in sectors in which only peripheral decisions are centralized are expected to act in a supportive or a regulatory capacity.

For example, when core decisions are centralized as in Sectors A and C, subordinate agencies such as the SAA or various public housing and poverty agencies are directly engaged in implementing the goals within each sector. By contrast, when only peripheral decisions are centralized, as in Sectors B and D, agencies such as the FAA, OSHA and EPA do not directly carry on the core

activities of their sectors, but are only expected to oversee or regulate them. Trade associations operating within private sectors provide another instance of the centralization of peripheral decision rights, such units tending to operate only in a supportive capacity.

Sector Controls: Closely related to sector decision-making characteristics are the modes of control exercised within sectors by higher over lower units. Three major types of control may be distinguished based on the types of indicators employed to assess performance (see Donabedian, 1966; Suchman, 1967; Scott, 1977):

- Structural controls focus on "organizational features or participant characteristics presumed to have an impact on organizational effectiveness, including administrative processes that support and direct production activities;" (Scott, 1977:84) e.g., measures of the adequacy of facilities and equipment; qualifications of participants.
- Process controls: "the standards employed focus attention on the activities performed by organizational participants, and assessment consists of determining the degree of conformity to these performance standards;" (Scott, 1977: 82) e.g., measures of numbers of clients served or units produced; quality assessments against some specified standard of performance.
- Outcome controls: "Outcome indicators focus attention on specific characteristics of materials or objects on which the organization has performed some operation;" (Scott, 1977: 75), e.g., measures of patients' mortality or morbidity in health care organizations; measures of students' information or skills in educational settings.

H_{19}: Organizations functioning in sectors that are highly developed technically but not institutionally will be subjected primarily to interlevel controls emphasizing outcomes.

For example, the Environmental Protection Agency (EPA) specifies emission standards for the regulation of pollution from automobiles. The attempt is to specify the quality of air to be obtained, not the method of achieving it or the qualifications of workers who are to produce the desired effect.

H_{20}: Organizations functioning in sectors that are highly developed institutionally but not technically will be subjected primarily to interlevel controls emphasizing structural measures.

In sectors like education and mental health, primary emphasis is placed on such structural controls as accreditation. certification and licensure.

H_{21}: Organizations functioning in sectors in which decision-making is centralized but fragmented are likely to be subjected primarily to interlevel controls emphasizing processes.

H_{22}: Organizations functioning in sectors in which the centralized decisions pertain primarily to peripheral rather than core matters are likely to be subjected primarily to interlevel controls emphasizing processes.

Agencies that must share control with other like units, as in the case of fragmented decision-making, as well as agencies that can only provide support or exercise oversight, as in the case of peripheral control, are rarely in a position to demand changes in outcomes. On the other hand, they can and do require evidence that effort is being expended in the pursuit of their goals. Process controls—emphasizing numbers of clients processed and numbers of tests administered—provide such evidence.

H_{23}: The exercise of structural controls is more compatible with the loose coupling of administrative to production tasks than is the exercise of process controls; and the exercise of process controls, more so than the exercise of outcome controls.

Indeed, much of the loose coupling literature (e.g., March and Olsen, 1976; Weick, 1976; Davis et al., 1977; Meyer and Rowan, 1977), can be interpreted as suggesting that structural features can vary somewhat independently of processes, and processess, of outcomes.

Concluding Comments

Other sector characteristics of interest undoubtedly can and will be identified as the work proceeds. In the meantime, however, we have convinced ourselves that this is a fruitful path to pursue--both theoretically and empirically. Theoretically, the development of analytic models that emphasize the hierarchical as well as the horizontal links among organizations, their determinants and their consequences, appears to be long overdue. Empirically, creating or locating relevant and appropriately aggregated data on sector organization represents a sizable challenge, but one we have no doubt can be met.

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